Ten-Mile River Bridge Seismic Retrofit/Replacement

State Route 1

01-Men-1-KP 111.7/112.9 (PM 69.2/70.1)

01-385700

Initial Study
with Proposed Mitigated Negative Declaration

Prepared by the

State of California Department of Transportation

March 2006

Caltrans Metric

Caltrans

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project in Mendocino County, California. The document describes why the project is being proposed, the existing environment that could be affected by the project, alternatives for the project as well as the potential impacts from each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read this Initial Study. Additional copies of this document as well as the technical studies are available for review at the Caltrans district office at 1656 Union Street, in Eureka, and at the Mendocino County Library at 499 Laurel Street in Fort Bragg.
- We welcome your comments. If you have any concerns regarding the proposed project or would like to request a public hearing, send your written comments to Caltrans by the deadline below. Submit comments via U.S. mail to Caltrans at the following address:

  Steve Croteau, Associate Environmental Planner
  District 1 North Region Environmental Services North
  California Department of Transportation
  1656 Union Street
  Eureka, CA 95501

- Submit comments via email to steven_croteau@dot.ca.gov.
- Submit comments by the deadline: May 5, 2006.

What happens next?

After comments are received from the public and reviewing agencies, Caltrans may 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Steve Croteau, District 1 Environmental Management Branch, 1656 Union, Eureka CA 95501; phone (707) 441-5615 Voice, or use the California Relay Service TTY number, (707) 445-6463.

01-MEN-1-KP 111.7/112.9
(PM 69.2/70.1)
01-385700

Replace the Ten Mile River Bridge on State Route 1 eight miles north of Fort Bragg, from kilometer posts 111.7 to 112.9 (post miles 69.2/70.1) in Mendocino County

INITIAL STUDY
with Proposed Mitigated Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

_____
Date of Approval

_____
Lena R. Ashley, Chief
North Region Environmental Services North
California Department of Transportation

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to replace the Ten Mile River Bridge on State Route 1, eight miles north of Fort Bragg in Mendocino County between kilometer posts 111.7 and 112.9 (post miles 69.2 and 70.1).

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision regarding the project is final. This Mitigated Negative Declaration is subject to modification based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The proposed project would have no effect on air quality, water quality, noise receptors, or hazardous waste.
- The proposed project would have no effect on local communities or visual resources.
- The proposed project would have no effect on floodplains, or wild or scenic rivers.
- The proposed project would have no effect on archaeological, historic, paleontological, or geological sites of record.

The proposed project would have no significant adverse effect on the state and federally protected tidewater goby, coho salmon, chinook salmon, steelhead trout, western snowy plover, brown pelican, marbled murrelet, northern spotted owl, Menzies' wallflower, and Howell's spineflower, or on wetland and eelgrass habitat:

- The impacts to threatened and endangered species would be mitigated in accordance with the Biological Opinions rendered by the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration National Marine Fisheries Service. The California Department of Fish and Game has also been consulted.

_____ _____

Lena R. Ashley, Chief
North Region Environmental Services North
California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) in cooperation with Mendocino County proposes to replace the Ten Mile River Bridge on State Route 1, eight miles north of Fort Bragg in Mendocino County between kilometer posts 111.7 and 112.9 (post miles 69.2 and 70.1). State Route 1 is an undivided two-lane highway that runs north and south along the Mendocino Coast. See Figure 1-1 Project Vicinity Map.

This project is programmed in the Seismic Retrofit Program and the State Highway Operations Protection Program (SHOPP) Bridge Rehabilitation Program. Depending on which alternative is chosen, the construction cost for the project is estimated to be between $40 to $42 million in fiscal year 2005/2006.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to replace the existing Ten Mile River Bridge.

1.2.2 Need

The project is needed because the Ten Mile River Bridge does not meet current State and Federal seismic standards.

The Ten Mile River Bridge is located approximately 10.8 miles from the San Andreas Fault. The San Andreas Fault is capable of generating a maximum credible earthquake of magnitude 8.0. The site is located within a peak bedrock acceleration zone of 0.4g. A seismic risk assessment determined that a minimum peak ground acceleration of 0.15g is required to initiate significant liquefaction at the site, resulting in bridge collapse.

The risk of bridge collapse is considered high, and there is no interim retrofit work that can be done to reduce structural deficiencies of the existing structure.

1.3 Alternatives

When the need for roadway improvements is identified on a portion of a state route, a Project Development Team is formed. The team recommends studies, timetables, alternatives, types of environmental documentation, and the feasibility of project impact mitigation. The team also ensures that state and federal requirements for project development have been met. The Project Development Team proposes the most feasible alternatives to study and considers the cost, schedule, and impacts of the project. Based on public input, the Project Development Team for this project developed two build and a no-build alternative for consideration.

1.3.1 Build Alternatives

In developing alternatives for this project, the Project Development Team determined that the new bridge should be a two lane bridge that meets current design standards, retains the rural character of State Route 1, and minimizes environmental impacts. The design had to meet Federal and State seismic safety standards, as well as current safety standards for shoulder width and barrier rail. The existing 1360 foot long bridge has one foot wide shoulders, which do not meet current standards and do not provide for shared use by motorists and bicyclists. For this project, substantial analysis went into highway shoulder widths, resulting in the determination that this project requires greater than four foot wide bridge shoulders. For a bridge of this length, design speed, and Average Daily Traffic (ADT), which has both vertical and horizontal curves (which are necessary to align with the existing highway), the mandatory design standard is eight foot wide shoulders. This standard applies if 400 or more vehicles cross the bridge per day. The ADT on the existing bridge is more than 1600 vehicles. This is also a designated bike route, and wider, eight foot wide shoulders allow safe crossing by bicyclists as well as equestrians and carriages. The eight foot shoulder standards are reflected in Alternative C.

Based on Ten Mile River Bridge's designation as part of the official coastal trail (January 2003), the California Coastal Commission requested that Caltrans split the eight foot shoulders (Alternative C), creating two four foot wide pedestrian walkways, and two four foot wide shoulders. Caltrans was not able to comply with this request due to Americans with Disabilities Act (ADA) requirements. The ADA requires five foot wide sidewalks, resulting in, when combined with a pedestrian safety barrier, a shoulder width of 2.4 feet wide. In response to the California Coastal Commission's pedestrian walkway request, Caltrans developed Alternative C-SW.

Alternative C-SW includes a single separated pedestrian walkway on the west side of the bridge. This alternative requires a design exception to reduce the shoulder widths from eight to six feet. Alternative C-SW would require minimal redesign work, and results in, as compared to Alternative C, no changes to potential environmental impacts. This alternative would allow the project to move forward expeditiously. If a complete redesign is required, the project cost would increase by several million dollars, and the project would be delayed a minimum of three to five years. There are three main reasons why Caltrans would develop a design exception for six foot wide shoulders and not four foot wide:

1) There is a significant (approximately 44%) reduction in expected collisions rates when six foot wide shoulders are used as compared to four foot wide shoulders.
2) The six foot shoulder is a significant improvement over a four foot wide shoulder for both vehicular and non-motorized traffic traversing the bridge. For example, a typical bicyclist is 30 inches wide. Four foot shoulders provide a bicyclist less than one foot on either side between the bridge railing and vehicle lane.
3) Given the urgency of this safety seismic bridge project, a design exception for six foot wide shoulders would be approved only if the project could be permitted and constructed with minimal delay.

Alternative C: Eight Foot Wide Shoulders

This alternative would replace the existing bridge with a Cast-in-Place/Prestressed Concrete Box Girder bridge on Cast-In-Drilled-Hole (Abutment 1, Pier 2, and Abutment 9) and Cast-In-Place-Steel-Shell pile foundation systems. The structure would be supported by two abutments and seven, two-column piers. Construction of temporary falsework, cofferdams, and trestles would be required for the construction of the new bridge and for the removal of the existing bridge.

The horizontal and vertical alignments were developed to match the existing bridge's geometrics as close as possible. The proposed bridge would be constructed on an approximately parallel alignment, east of the existing structure, at a variable offset of 49 feet to 62 feet. The new bridge would be 1480 feet long with two 12 foot wide lanes and eight foot shoulders on both sides (see Figure 1-2 and Figure 1-3). In order to conform to the existing roadway, the shoulders would transition from eight to four to one foot off the bridge.

Additional work involves realigning, extending, or replacing ditches/culverts, and installing a new bridge approach Metal Beam Guardrail.

A private gravel road located north of the Ten Mile River Bridge along the east side of Highway 1 would be realigned outside Caltrans' proposed right of way.

Alternative C-SW: Five Foot Wide Sidewalk on West Side of Bridge and Six Foot Wide Shoulders

At a November, 2005 hearing, the California Coastal Commission conditionally approved a Federal Consistency Certification for the replacement of the Ten Mile River Bridge. The Commission's condition was that Caltrans submit revised project plans that provide for pedestrian pathways separated from vehicular traffic lanes and located within the eight foot wide shoulders on both sides of the bridge. The alternative proposed by the Commission was to split each eight foot shoulder into a four foot wide shoulder and four foot wide pedestrian pathway, with a barrier separating the roadway from the pedestrian pathway.

Alternative C-SW was developed in response to the Commission's condition. Though not identical to the alternative proposed by the Commission, it addresses Caltrans' need to meet safety standards and requirements of the Americans with Disabilities Act (ADA), as well as the Commission's desire to provide a pedestrian pathway while limiting the overall width of the proposed structure. The Commission's alternative did not take into account the width of the barrier structures between the shoulder and the pedestrian pathway, and it did not meet the ADA requirement for a five foot (not four foot) sidewalk. Alternative C-SW is functionally equivalent to the Commission's alternative and meets ADA requirements.

Alternative C-SW (see Figure 1-2 and Figure 1-4) and Alternative C would have the same project footprint, and would have the same number of piers and columns in the river. The two alternatives differ by the following:

- Alternative C-SW's centerline would be approximately 2.8 feet to the east of Alternative C's
- Alternative C-SW's bridge deck would be approximately 1.6 feet wider than Alternative C's

- Alternative C-SW would have a five foot pedestrian walkway on the west side of the bridge, an approximate 1.6 foot wide safety barrier between the walkway and the highway shoulder, and the highway shoulders would be six feet wide.

A design exception is being pursued for the non-standard six foot shoulder width. In addition, State and Federal guidelines typically require bridge pedestrian walkways to have lights. Because of the rural area of the project vicinity, a design exception to not include bridge pedestrian lights is being pursued.

1.3.2 Alternatives Considered but Rejected

Alternative C-SW2: Four Foot Wide Shoulders and Four Foot Wide Sidewalks on Both Sides of Bridge

At the November 2005 California Coastal Commission meeting, the Commission conditionally approved a Federal Consistency Certification for the replacement of the Ten Mile River Bridge based on taking the existing Alternative C proposed bridge shoulder width and splitting the eight foot shoulders into two four foot wide shoulders and two four foot wide pedestrian walkways. Based on this condition, Alternative C-SW2 (four foot shoulders and four foot sidewalks without widening the bridge deck) was developed and evaluated. Analysis indicated that the Commission's recommended bridge width design would not meet Caltrans' safety standards or the Americans with Disabilities Act (ADA) requirement for a five foot wide sidewalk.

The required five foot wide sidewalk and 1.6 foot wide walkway barrier result in an approximate 2.4 foot wide highway shoulder. This alternative was found infeasible due to State and Federal safety standards. For a bridge of this length, design speed, and Average Daily Traffic (ADT), and which has both vertical and horizontal curves (which are necessary to align with the existing highway), the mandatory design standard is eight foot wide shoulders. A justifiable design exception to allow 2.4 foot wide shoulder widths was not viable for this alternative.

Alternative C-SW2R: Eight Foot Wide Shoulders and Five Foot Wide Sidewalks on Both Sides of Bridge

Alternative C-SW2R would be on the approximate same alignment as Alternative C, but would include eight foot shoulders and five foot sidewalks on both sides of the bridge. This alternative was found infeasible due to the potential impacts on visual,

wetland, and biological resources. This alternative would require the bridge structure to be approximately 56 feet wide (approximately 13 feet wider than Alternative C), creating a facility with a visually urban "feel" that would not fit in with the rural character of the project vicinity. In addition, when developing the project, the Project Development Team focused on minimizing potential impacts on wetland and biological resources. Based on the increased number of piles necessary to construct the new bridge, as compared to Alternative C or Alternative C-SW, this alternative would result in a net increase in permanently removed wetland and fish habitat.

Alternative A

Alternative A proposed to replace the Ten Mile River Bridge with a two-lane bridge east of the existing bridge at a variable offset alignment of 55 feet to 140 feet. Although this alignment avoided impacts to sensitive species found to the west of the existing bridge, it generated a longer bridge and had substantial wetland impacts.

Alternative B

Alternative B proposed to replace the Ten Mile River Bridge with a two-lane bridge west of the existing bridge at a variable offset of 30 feet to 110 feet. As compared to Alternative A, this alternative had less impacts on wetlands, however, it had direct impacts to State listed plants found to the west of the existing bridge. It also had impacts to the adjacent State Park, including right of way acquisition, which likely would have not been feasible under Section 4(f) of the Department of Transportaion Act. Construction of this alternative would be more difficult than Alternative A because a two-season detour at the north end of the bridge would be needed to construct the abutment.

Alternative 1

Alternative 1 proposed to retrofit the existing bridge by constructing outrigger bents, encasing the existing columns, and retaining the nonstandard bridge rails. This alternative would have impacts to the river through the addition of more pilings and foundations located on the river bottom, and would have an adverse visual impact. This proposal was estimated to extend the life of the existing bridge by 20 years, at which time the bridge would have to be fully replaced. This was deemed to be neither cost-effective nor environmentally sensitive, and it was rejected.

Alternative 2

Alternative 2 proposed to retrofit the existing bridge by enlarging the spread-footing foundations, encasing the existing columns, and retaining the nonstandard bridge rails. This alternative would have high impacts to the river and adjacent wetlands by increasing the coverage of these areas with larger foundations. This proposal also could have substantial impacts on listed fish species. As with Alternative 1, this proposal was estimated to extend the life of the existing bridge by 20 years, at which time the bridge would have to be fully replaced. This was deemed to be neither cost-effective nor environmentally sensitive, and it was rejected.

No-Build Alternative

The no-build alternative would leave the Ten Mile River Bridge as it is, with the bridge being at continued risk for collapse. The no-build alternative would not meet the purpose and need of the project.

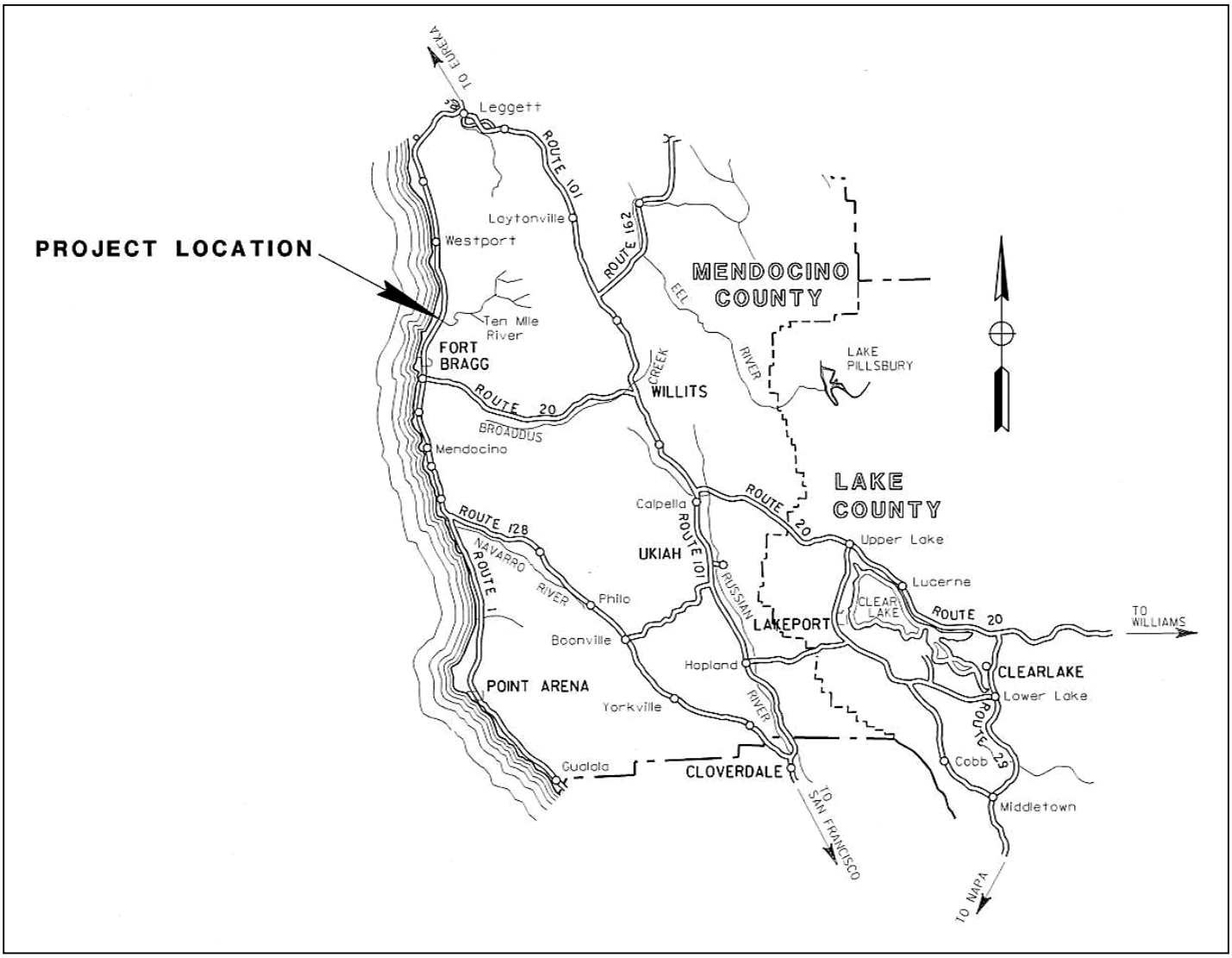


Figure 1-1 Project Location Map

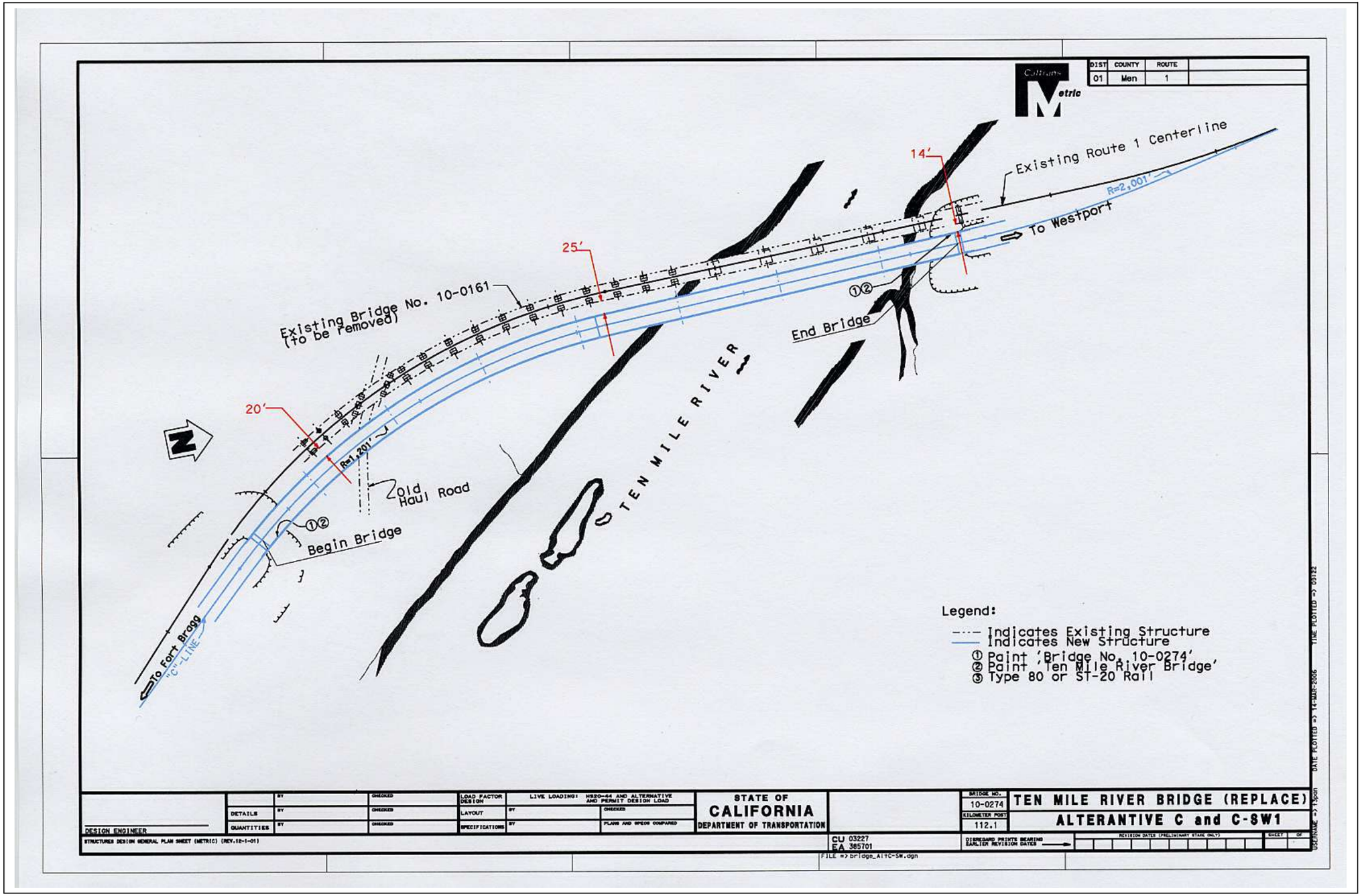


Figure 1-2 Alternatives C and C-SW

Figure 1-2 Alternative C and C-SW

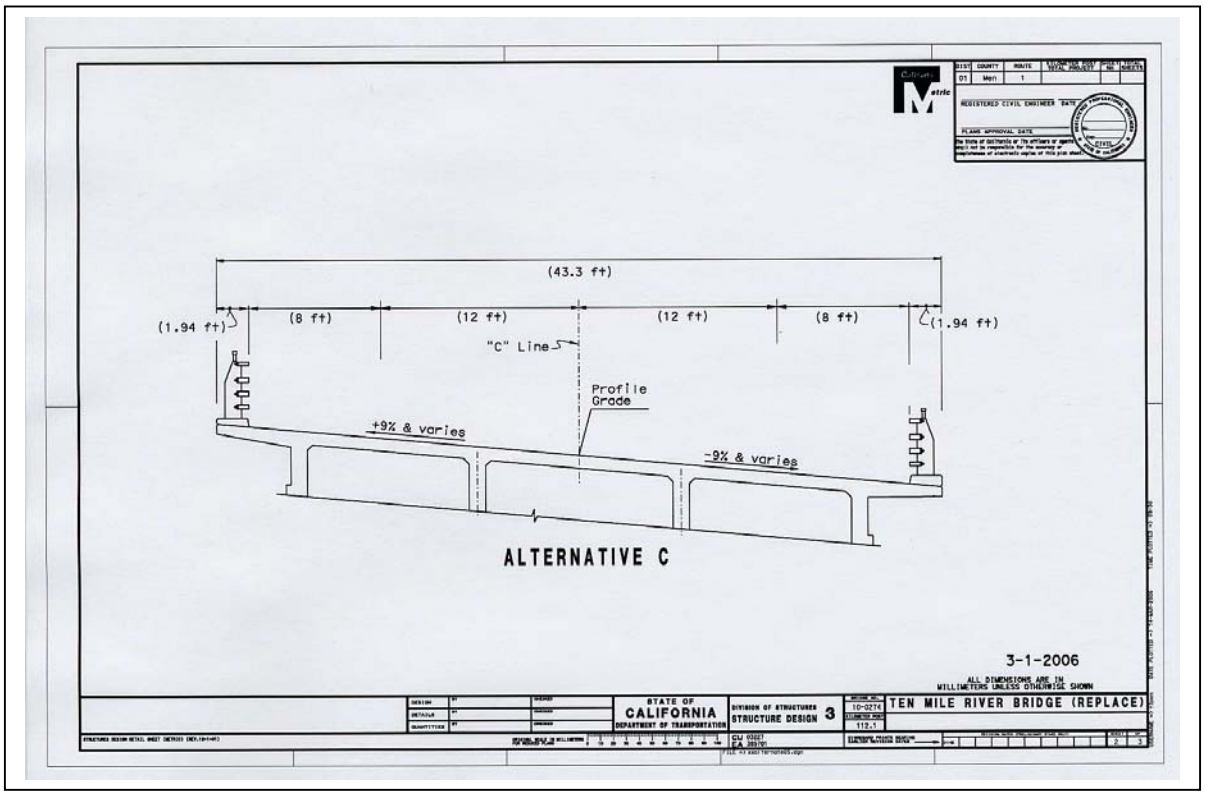


Figure 1-3 Typical Bridge Cross-Section For Alternative C

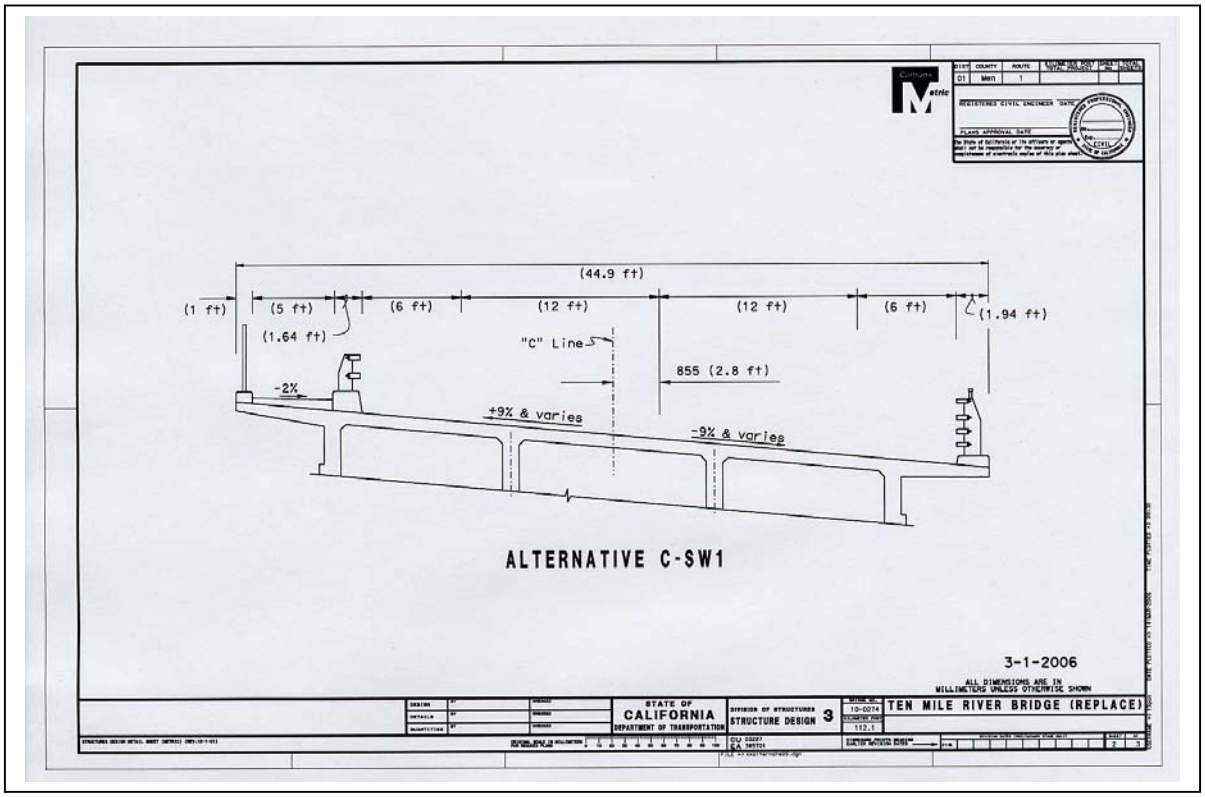


Figure 1-4 Typical Bridge Cross-Section For Alternative C-SW

1.4 Permits and Approvals Needed

The proposed project would require the following permits and approvals:

- Biological Opinion: U.S. Fish and Wildlife Service
- Biological Opinion: National Oceanic and Atmospheric Administration's National Marine Fisheries Service
- Biological Opinion Consistency Determination: California Department of Fish and Game
- 401 Certification: Regional Water Quality Control Board
- 404 Permit: Army Corps of Engineers
- 1602 Streambed Alteration Agreement: California Department of Fish and Game
- California Coastal Permit: California Coastal Commission
- Local Coastal Permit: Mendocino County
- Land Lease: State Lands Commission
- National Pollutant Discharge Elimination System Permit: Regional Water Quality Control Board

Chapter 2 Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This chapter explains the impacts the project would have on the human, physical, and biological environments in the project area. It describes the existing environment that could be affected by the project and potential impacts from each of the alternatives.

As part of the scoping and environmental analysis conducted for the project, the following environmental resources were considered, but no potential for adverse impacts to these resources was identified for either proposed build alternative. Consequently, there is no further discussion regarding these resources in this document:

- Growth—The proposed project is in response to the bridge's seismic deficiencies. The project is not capacity increasing, not proposed to support new or unplanned development, and is consistent with local and regional land use and transportation planning.
- Community Impacts—No businesses or residences lie in the project area, and the project would not create a hardship on local businesses, residences, or emergency facilities.
- Traffic and Transportation/Pedestrian and Bicycle Facilities—The project would not increase traffic capacity or congestion along the route, and would enhance pedestrian and bicycle safety.
- Farmlands/Timberlands—There are no farm or timberlands located within the project limits. There is an agricultural deed restriction, imposed by the California Coastal Commission, on a parcel of land necessary for the project. This parcel is discussed in Section 2.1.1, Land Use.
- Cultural Resources—No cultural resources exist in the project area. A Historic Property Survey Report was submitted to the California State Historic Preservation Officer, who submitted a letter to Caltrans concurring with the findings (see Appendix C).

- Floodplain—This project would include the construction of seven piers within the 100 year floodplain. The existing bridge has 20 piers and bents within the 100 year floodplain. Having 13 fewer piers, resulting in 291.46 square feet less area than existing within the floodplain, the new bridge would result in less of a backwater effect than the existing bridge (Floodplain Analysis, April 8, 2005).
- Geology/Soils/Seismic/Topography—the project is being proposed due to seismic risk. The bridge would be designed and constructed to withstand a maximum credible earthquake of 8 magnitude on the Richter Scale. The project would not alter the surrounding topography and would not create soil erosion or instability (Geotechnical Design Report, July 12, 2004).
- Paleontology—Analysis of the geologic features in the area indicated the project is not likely to encounter sensitive paleontology resources (Geologic Formation Map Analysis, November 29, 2005). If resources were found during construction, a qualified paleontologist would monitor construction and evaluate and catalog excavated materials.
- Hazardous Waste/Materials—An Initial Site Assessment of the project limits indicated the project would not encounter hazardous waste (Initial Site Assessment, July 22, 2004).
- Air Quality—This project is an operational improvement project, considered neutral or beneficial for regional air quality, and is exempt from the requirement for a conformity determination (Air, Noise and Vibration Report, January 7, 2004).
- Noise and Vibration—Three residents are located adjacent to the project limits at the bridge's northern abutment. Compared to the existing bridge, the new bridge would be constructed farther away from two of the residents, and closer to one resident (north bridge abutment, east side of highway, approximately 30 feet closer). The traffic volumes, composition, and speeds would remain the same with or without the project. Analysis indicated noise levels for the resident north east of the bridge would not meet or exceed federal and state noise criteria (Air, Noise and Vibration Report, January 7, 2004).
- Public Services—The project would have no effect on fire protection, police protection, schools, parks or other public facilities because the project site is not adjacent to any homes, schools, parks, hospitals or churches (Air, Noise and Water Assessment, March 13, 2002).

2.1 Human Environment

2.1.1 Land Use

This section evaluates how the land is used (e.g., rangeland, coastal zone, open space) in the project area, and the potential for the project to change land use patterns. Given the project footprint would be the same for both proposed build alternatives, the following land use discussion applies equally to both alternatives.

2.1.1.1 Background

The proposed project is located approximately eight miles north of Fort Bragg on State Route 1 in Mendocino County (Post Miles 69.2/70.1). State Route 1 is the main highway in the area, providing access for tourists, residents, and commodities through the area.

2.1.1.2 Existing and Future Land Use

Land use in the area consists of rangeland, coastal zone, open space, and floodplain. Approximately 12 total acres of additional right-of-way would be required for the project. Assessor Parcel Number 069-010-22 has a section of land that is designated as "Agriculturally Deed Restricted." A piece of this deed-restricted land would be required for the project. With the exception of this proposed change in this parcel's deed restriction, no future land use conversion is planned within the project limits.

Mendocino County General Plan and Local Coastal Plan

The project area is in unincorporated Mendocino County's coastal area. Land use in this area is outlined in the County's Coastal Element of the General Plan. Currently the County's General Plan is in the process of being updated. Until the General Plan update is adopted (anticipated in the fourth quarter of 2006), the 1981 General Plan contains the adopted goals, objectives, and policies for the county.

Public Facilities

Just west of the project limits is a large area zoned as Public Lands, part of the MacKerricher State Park, a 1530-acre park in the California State Parks system. As the name suggests, Public Lands are set aside for public uses, such as parks, roadways, or county facilities.

Safety

The General Plan states that in seismically active areas avoiding future risk should involve detailed soil testing and special regulations for building location and structural requirements.

Circulation

The General Plan's Circulation Element states that the county must provide an adequate, well maintained, efficient, and safe network of state highways that form the central element of the region's highway, road and street systems, and provides for both the regional and inter-regional transportation needs of the County.

Regional Transportation Plan

The Mendocino Council of Governments (MCOG) is the regional transportation-planning agency for Mendocino County, and is responsible for preparing the Regional Transportation Plan for the county. The Regional Transportation Plan summarizes the region's long-term transportation goals, objectives, and policies. The 2003 Mendocino County Regional Transportation Plan identifies this project, and describes Route 1 as a significant regional highway corridor.

State Water Resources Control Board: Watershed Management Initiative

The State Water Resources Control Board prepared a watershed management initiative for the North Coast in January 2002, which includes Ten Mile River. As stated in this plan, "the primary issues associated with water quality in North Coast Rivers (Watershed Management Area) are focused on the beneficial uses for drinking water supply, recreation, and salmonid fishery."

This project would comply with the State Water Resources Control Board Watershed Management Initiative for North Coast rivers. Measures would be taken to follow the initiatives, goals, and strategies for river and watershed preservation.

2.1.1.3 Impacts

Mendocino County General Plan and Local Coastal Plan

The Mendocino County Local Coastal Plan states, "it shall be a goal of the Transportation Section to achieve, *where possible* and consistent with other objectives of The Coastal Act and plan policies for Highway 1, a road bed with a vehicle lane width of 16 feet including the shoulder to achieve a 32 foot paved roadway (12-foot vehicle lane and 4-foot paved shoulder)."

State and federal safety guidelines indicate that a bridge of this length, design speed, and having vertical and horizontal curves (which are necessary to align with existing highway) requires shoulders of eight feet wide unless a justifiable design exception could be developed. A design exception is being prepared for six foot shoulders, and, in order to best meet the Local Coastal Plans' four foot shoulder requirements, the six to four foot shoulder transition off the bridge was shortened to the greatest extent possible, while still meeting safety needs. Given the project's design to meet safety guidelines, while also *where possible* meeting the Local Coastal Plan roadbed width guidelines, the proposed project would be consistent with the County General Plan and Local Coastal Plan. Coordination with the regulatory agencies charged with protecting the area's natural resources would ensure that impacts to resources are minimized.

Regional Transportation Plan

The project is identified in Mendocino County's current Regional Transportation Plan.

Safety

The project would replace a seismically deficient structure, thus creating a more safe and reliable structure, and highway.

Parcels

Approximately 12 acres of additional right of way would be required for both build alternatives (Table 2-1 and Table 2-2 shows the right of way required for the project from each parcel, and the zoning associated with each parcel). This property would be secured by fee, permanent easement, or temporary easement. Fee means the property is purchased and permanently owned by the State. Permanent easement on a parcel means the land is not owned by the State, but the State has rights to access when necessary (e.g., maintenance and emergency situations). Temporary easement means the State has rights to access the parcel temporarily (e.g., during project construction). The land necessary for the project would be located adjacent (to the east) to the existing State right of way.

As described in the "Existing and Future Land Use" section above, the parcel with the deed restriction (Assessor Parcel Number 069-010-22) is not and has not been used for agriculture. The restriction was negotiated through an agreement with the California Coastal Commission in order for the applicant to obtain a development permit for another portion of the parcel. The Coastal Development Permit would need

to be amended to include transportation as an allowable use for that portion of the parcel.

Table 2-1 Required Right of Way

Property Rights Required	Acres	Assessor Parcel Number	Zoning
Fee (Purchase)	0.86	069-010-22	Rangeland (RL)-160, Coastal Zone (CZ)
Permanent Easement	1.10	069-010-22	Rangeland (RL)-160, Coastal Zone (CZ)
Temporary Easements	0.45	069-010-22	Rangeland (RL)-160, Coastal Zone (CZ)
Fee (Purchase)	2.05	015-130-47	Split Zone: Open Space (OS) and Rangeland (RL-160), Floodplain (FP), Coastal Zone (CZ)
Permanent Easement	0.12	015-130-47	Split Zone: Open Space (OS) and Rangeland (RL-160), Floodplain (FP), Coastal Zone (CZ)
Temporary Easements	0.59	015-130-47	Split Zone: Open Space (OS) and Rangeland (RL-160), Floodplain (FP), Coastal Zone (CZ)
Temporary Easement	2.30	015-130-46	Open Space (OS), Floodplain (FP), Coastal Zone (CZ)
Public Land Lease: State Lands Commission	3.70	N/A	
Fee (Purchase)	0.67	015-130-40	Rangeland (RL)-160, Floodplain (FP), Coastal Zone (CZ)
Total	11.84		

Table 2-2 Summary of Required Right of Way

Area Totals by property right	
Fee (Purchase):	3.58
Permanent Easements:	1.22
Temporary Easements:	3.34
Public Land Lease:	3.70
Total area (acres):	**11.84**

2.1.1.4 Avoidance, Minimization, and Mitigation Measures

In order to avoid and minimize impacts to land use, aesthetics, and migratory bird nesting patterns, the bridge was designed to closely mimic the design of the existing bridge, including placing the bridge as close as possible to the existing bridge.

2.1.1.5 Cumulative Impacts

Due to avoidance and minimization measures, cumulative impacts on land use would not be anticipated.

2.2 Biological Environment

This section evaluates the potential for the project to impact listed biological species. Given the project footprint would be the same for both proposed build alternatives, the following biological resources discussion applies equally to both alternatives.

2.2.1 Threatened and Endangered Species

2.2.1.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act: United States Code, Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of formal consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of the Federal Endangered Species Act defines take as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or any attempt at such conduct.”

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code, Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats.

The California Department of Fish and Game is the agency responsible for implementing the California Endangered Species Act. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. “Take” is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise

lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Game. For projects requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Game may also authorize impacts to the California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

2.2.1.2 Affected Environment

Animals

A Natural Environmental Study was prepared in December 2005, and is available upon request.

Special Status Species

The federally protected tidewater goby, coho salmon, chinook salmon, steelhead trout, western snowy plover, the brown pelican, the marbled murrelet, and the northern spotted owl have the potential to occur within the project limits. Consultations are ongoing with the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration National Marine Fisheries Service, and the California Department of Fish and Game to determine the potential impacts the project may have on these species and the measures that could be taken to reduce potential impacts.

Mammals

The Ten Mile River provides habitat for marine mammals such as harbor seals and, to a lesser degree, California sea lions. These species are protected under the Marine Mammal Protection Act. River otters have been observed within the project limits.

Birds

A cliff swallow colony, with pairs numbering in the hundreds, can be found nesting on the existing bridge from March through the end of August. This colony is the largest in Mendocino County and among the largest in Northern California.

Other types of birds observed in the area include several species of sandpipers, gulls, egrets, hummingbirds, phoebes, wrens, warblers, sparrows, osprey, and blackbirds. The riparian habitat under and adjacent to the bridge provides nesting habitat for some of these species. In addition to the cliff swallow, the existing bridge itself provides nesting habitat for purple martins, which have been documented nesting in the drainage holes of the bridge.

Habitat Types and Plants

Botanical surveys were conducted on April 15, May 13, May 27, and June 10, 2005 during the appropriate flowering period for species occurring in the area. The surveys focused on sensitive species, and on federal and state listed species. (Natural Environmental Study, December 5, 2005).

Habitat types in this area include Northern (Franciscan) Coastal Scrub, Coastal Brackish Marsh, Freshwater Marsh, and Bays and Estuaries.

The southerly end of the project originates in uplands consisting of a stable, vegetated, relic sand dune ridge with a northeast aspect and slope of about 10%. Soil consists of a yellow sand/loam with a shallow surface horizon of decayed organic material and sand. Vegetation in this area varies from grassland (an area disturbed by the power line access road and highway road cut) to mature Northern (Franciscan) Coastal Scrub. The area has been disturbed in the past by grading, fence installation, power line installation and maintenance, and highway construction. The southern end of the project limits is not within a sensitive habitat type. Dominant vegetation consists of coyote bush (*Baccharis pilularis*), Sitka spruce (*Picea sitchensis*), wax myrtle (*Myrica californica*), hazelnut (*Corylus cornuta*), salal (*Gaultheria shallon*), poison oak (*Toxicodendron diversilobum*), and California blackberry (*Rubus ursinus*).

Progressing north, the project area crosses a haul road. Below the north embankment of the haul road, the project extends into the adjacent wetlands along the south bank of Ten Mile River. These wetlands are dominated by habitat transitioning from Freshwater Marsh to Coastal Brackish Marsh. Within the freshwater marsh, the dominant plant types found are willow (*Salix hookeriana*), wax myrtle (*Myrica californica*) scrub with an understory of slough sedge (*Carex obnupta*) and water hemlock. Closer to the river, the adjacent wetland is dominated by wetland grasses and Pacific silverweed (*Potentilla anserina*). The banks of the river are vegetated with a mix of salt rush (*Juncus lesueurii*), salt grass (*Distichalis spicata*), (*Scirpus maritimus*), Pacific silverweed (*Potentilla* sp.), and pickleweed (*Salicornia virginica*).

The project area then crosses Ten Mile River to the north bank. The north bank of the river has a very narrow fringe of wetland comprised of accreted sandy soil with emergent wetland vegetation dominated by *Scirpus maritimus* along the bank. The north bank is an abrupt, steep rocky face extending into northern coastal scrub uplands.

Eelgrass

Within the wetted channel within the project limits there are extensive aquatic areas vegetated with eelgrass (*Zostera marina*), interspersed with non-vegetated mud in both shallow and deep-water channels. The eelgrass and mud flats are considered "special aquatic sites" for the purpose of Army Corps of Engineers jurisdiction. See Figure 1-5 for the vegetation communities located within the project limits.

2.2.1.3 Impacts

Special Status Species

The project has the potential to impact several state and federal listed species: tidewater goby, coho salmon, chinook salmon, and steelhead trout. Potential impacts to the tidewater goby may occur as a result of pile driving and cofferdam construction and removal. Potential impacts to the coho salmon, chinook salmon, and steelhead trout would be through sound wave generation by pile driving. Pile driving could cause consistent peak pressure levels of 190 decibels. These pressure levels may impact fish species by causing physical internal damage such as hearing loss or bladder rupture. Pressure levels generated by pile driving can also cause secondary impacts to fish such as disorientation, enabling them to be more easily captured by a predator.

Habitat within the project limits is not conducive for use by the western snowy plover, the brown pelican, the marbled murrelet, or the northern spotted owl, therefore impacts to these species are not anticipated.

Mammals

Due to project design and avoidance and minimization measures, impacts to mammals would not be anticipated.

Birds

Due to avoidance and minimization measures, impacts to bird species would not be anticipated.

Eelgrass

The project would temporarily impact 0.06 acres of eelgrass habitat, with a net increase of 0.03 acres of eelgrass habitat after construction is complete.

2.2.1.4 Avoidance, Minimization, and/or Mitigation Measures

Protection measures for the special-status species would be included in the construction contract's special provisions. Other mitigation measures include pre-construction surveys for eelgrass, a pre-construction educational meeting with contractors, and construction monitoring. Best Management Practices (BMP) for protection of water quality would be specified in the Storm Water Pollution Prevention Plan report (SWPPP), and would be implemented during construction. Equipment parking, project access, supply logistics, equipment maintenance, and other project-related construction activities would occur within the project limits. Given the project would result in a net gain in essential fish habitat (e.g., the new bridge would have fewer piers in water, therefore more river bed area), mitigation is not proposed for essential fish habitat. The following avoidance and minimization measures would occur:

- Conduct a pre-construction educational meeting—An employee education program would be included in the pre-construction meeting. A Caltrans biologist or other qualified biologist would conduct this portion of the meeting.
- Monitor construction—A Caltrans biologist or other qualified biologist would monitor the construction of the project within the bed, bank and channel of the Ten Mile River. This individual would visit the site to assure all construction personnel and activities are in compliance with the National Oceanic and Atmospheric Administration National Marine Fisheries Service and the U.S. Fish and Wildlife Service Biological Opinions as well as other permits, certifications, and agreements (401, 404, 1602).
- The existing bridge would be removed after the swallow nesting season.
- In addition to the 0.002 net acre increase of river/eelgrass habitat that would be achieved with the project, Caltrans would monitor the new eelgrass habitat. If one year after project completion the eelgrass has not fully recovered, Caltrans would replant eelgrass and monitor until the successful establishment of the grass.
- Construction would utilize Best Management Practices to control silt and erosion of exposed soils. All affected areas would be restored to natural elevations and revegetated with native plants. A Revegetation Plan has been prepared that discusses methodologies to be used for revegetation after the project has been completed.
- A spill prevention and control plan would be developed by the contractor and approved by Caltrans prior to the commencement of work.

- The project includes a variety of actions that may result in adverse effects to the tidewater goby and salmonids due to underwater noise/sound pressure waves generated by driving piles. Most of these impacts are temporary in that they only occur during a portion of the construction of the project.
- Up and downstream movement of fish within the Ten Mile River estuary would be maintained throughout the entire construction project.
- A fisheries biologist would be onsite during the installation of cofferdams and during the cofferdam dewatering process to capture and move trapped gobies and salmonids, along with any other fish, to suitable habitat upstream of the work area.
- Early analysis indicated that larger diameter cast in steel shell (CISS) permanent piles create higher dB levels than smaller diameter piles during pile driving. To reduce potential peak noise levels, Caltrans changed foundation type and reduced the diameter of the cast in steel shell piles from 2.1 to 0.76 meter (7 to 2.5 feet).
- In order to attenuate noise, during project development Caltrans changed the project to specify H piles instead of steel pipe piles for the temporary trestle and falsework piles that would be used in the river.
- Dewatered isolation casings or a similar structure would be used to drive the temporary H piles in the river. The driving of temporary H piles through a dewatered isolation casing should not cause peak pressure levels over 190 dB at 10 meters (32 feet).
- Dewatered cofferdams would serve as attenuation systems when the permanent piles are driven, minimizing potential noise effects to tidewater gobies, out migrating coho smolts, and migrating adult salmonids. As described in the attached Hydroacoustic Report, the use of dewatered cofferdams is the best noise attenuation method for permanent pile driving and should result in peak pressure levels no higher than 190 dB at 10m (32 feet) from the source.
- Bubble curtains were considered, but analysis indicated that given the depth of the river, noise attenuation would not be substantial. Furthermore, given the river is extremely shallow within the project limits, bubble curtains would create high levels of turbidity.
- Caltrans is committed to dewater cofferdams during permanent pile driving as a noise attenuation measure. For this project, water would be lowered within each cofferdam (eight total required—three for the proposed new bridge, and five for the existing bridge pier) by pumping to allow trapped fish to be rescued. After the fish rescue is completed, the water level inside the cofferdam would be kept at or

below the existing river mud line. Maintaining the water at this level achieves the highest level of noise attenuation for permanent pile driving.

- The installation of the temporary piles, including the cofferdams, for both the construction of the new bridge as well as the demolition of the existing bridge, would occur between June 15 and October 31 of the first year and between September 15 and October 31 of subsequent years. This schedule allows most of the gobies' breeding season to be uninterrupted by construction of temporary piles, which would occur outside of the spring peak breeding time and would reduce the adverse effects during the fall peak breeding times.
- The schedule described above for the installation of the temporary piles also benefits salmonids since the bulk if not all of the juvenile salmonid population would not be present near the project site during this work in the river.
- The installation of the permanent piles within the cofferdams may occur year round, but would likely commence in late summer and continue through the winter of the first year.
- A Marine Mammal Monitoring Plan for the bridge replacement project has been prepared in coordination with both National Oceanic and Atmospheric Administration Fisheries and the California Department of Fish and Game. The plan would include observing behavioral changes, if any, in marine mammals within a predetermined safety zone. Pile driving activities would be allowed to begin or continue based on the type of behavior exhibited and the location of any marine mammal.

In addition, in order to meet the obligation to fully mitigate potential effects to coho salmon under the California Endangered Species Act, a site would be chosen where a fish passage enhancement project would be conducted. Caltrans is committed to working cooperatively with the California Department of Fish and Game by exploring concepts for offsite work that would enhance fish passage.

2.2.1.5 Cumulative Impacts

Due to avoidance and minimization, and enhancement measures, cumulative impacts on any species would not be anticipated with the project.

2.2.2 Wetlands and Waters of the United States

This section evaluates the project's potential to impact wetlands and waters of the United States. Given the project footprint would be the same for both proposed build

alternatives, the following wetlands and waters of the United States discussion applies equally to both alternatives.

2.2.2.1 Regulatory Setting

Wetlands and other waters of the United States are protected under a number of laws and regulations. At the federal level, the Clean Water Act (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers with oversight by the Environmental Protection Agency.

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as the Federal Highway Administration, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the California Department of Fish and Game and the Regional Water Quality Control Boards. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission) may also be involved. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify the California Department of Fish and Game before beginning construction. If the California Department of Fish and Game determines

that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement would be required. The California Department of Fish and Game's jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Game.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Regional Water Quality Control Board also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

2.2.2.2 Affected Environment

A Wetland Delineation Report was prepared on April 28, 2005. Within the project limits, along the north and south embankment of the river, lies Army Corps of Engineers defined wetland habitat, and, within the project limits, all bed, bank, and channel are defined as wetland habitat by the California Coastal Commission (see Figure 1-5). The wetlands are dominated by habitat transitioning from Freshwater Marsh to Coastal Brackish Marsh. Within the freshwater marsh, the dominant plant types found are willow (*Salix hookeriana*), wax myrtle (*Myrica californica*) scrub with an understory of slough sedge (*Carex obnupta*) and water hemlock. Closer to the river, the adjacent wetland is dominated by wetland grasses and Pacific silverweed (*Potentilla anserina*).

2.2.2.3 Impacts

The project would include 0.003 acres of new wetland fill on the south bank of the river from new bridge piers. The project would also include 0.006 acres of existing bridge piers to be removed from south bank wetlands, resulting in a net increase in wetlands of 0.003 acres.

2.2.2.4 Avoidance, Minimization, and Mitigation Measures

In addition to the 0.003 net acre increase in wetland habitat that would be achieved with the project, Caltrans would implement restoration actions (e.g., soil backfill, benthic sediment backfill, plantings) for temporary impacts. If one year after project completion the temporarily impacted areas have not fully recovered, Caltrans would

replant, monitor, and implement other appropriate measures until successful habitat recovery has been achieved. For permanent wetland impacts, Caltrans would create 0.003 acres of new wetland habitat within the project limits. The new wetland habitat would be monitored, and replanted as necessary until the wetland has been established and is self-sustaining.

2.2.2.5 Cumulative Impacts

Given the project would result in a net increase in wetlands, cumulative impacts would not be anticipated with the project.

Figure 1-5 Project Limits Vegetation Communities

Figure 1-5 Vegetation Communities

2.3 Physical Environment

2.3.1 Aesthetic Resources

This section evaluates the project's potential to impact visual resources within the project area. Given the project footprint would be the same for both proposed build alternatives, the following aesthetic resource discussion (unless otherwise noted) applies equally to both alternatives.

2.3.1.1 Regulatory Setting

The National Environmental Policy Act of 1969, as amended, (NEPA) establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. To further emphasize this point, the Federal Highway Administration in its implementation of NEPA [23 U.S.C. 109(h)] directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts including, among others, the destruction or disruption of aesthetic values.

Likewise, the California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities." [CA Public Resources Code Section 21001(b)]

2.3.1.2 Affected Environment

A Visual Resource Assessment was completed in April 2005. The project is visually contained within the Ten Mile River Basin, which is lower than the surrounding landscape due to years of erosion. Views outside of the river basin onto the bridge are available only from long distances, from hillsides of the surrounding landscape.

Project Viewers

Viewers within the basin were identified and grouped into five different categories based on their viewpoint and land use within the project area, for ease of reference and analysis.

Viewer Group One: consists of the residents living in close proximity of the bridge on the north side of the river. A few of the residents have foreground views of the bridge. The majority, however, have the bridge located in their middleground or background views. Users of the county roads to the north of the project also have views of the

project from some points along the roads. Residents are located on both east and west sides of the bridge. Residences to the west, with the exception of one, are in the middle to background of the Ten Mile River Bridge. The house directly in the riparian corridor just west of the bridge however, has the bridge in the foreground view, and would have views impacted by all alternatives. With the exception of a few that have direct views of the bridge most residences to the east of the bridge have the bridge in the middle and background views.

Viewer Group Two: includes all recreational users of the Ten Mile River Corridor, i.e. anglers, boaters, nature enthusiasts, etc. Effects to views to this group would vary depending on alternative and vantage point. Visual changes would obviously be more evident the closer the viewer is to the structure itself.

Viewer Group Three: consists of users and viewers from the MacKerricher State Park; there are several places within the Park with views of the Ten Mile River Corridor and project area. Views affected from this area would also vary depending on viewpoint. The bridge falls in fore, middle, and background views on the northern end of the Park, where the bridge can be seen from the beach, trail and from the top of the dunes.

Viewer Group Four: are the users of the private road and the adjacent private land to the south of the river. Viewers in this area can see the project from many viewpoints, with sensitivity lessening as distance from the bridge increases.

Viewer Group Five: is comprised of north and southbound travelers along Route 1 that enter the viewshed of the Ten Mile River Bridge, as well as coastal trail users and bicyclists riding the Pacific Coast Bike Route. To the vehicular traveler visual changes would be noticeable to both passengers and drivers. Bicyclists would experience the view for a longer period of time as they travel slower than cars, and their views are predominantly in the southbound direction, as the vast majority of cyclists travel southbound to travel in the same direction as the prevailing northerly winds.

2.3.1.3 Impacts

Construction of the new bridge would add several features to the landscape within the project limits.

- The existing bridge deck is approximately 31 feet wide, and the new bridge deck would be approximately 43.3 to 44.4 feet wide, resulting in a

structure 12.3 to 13.9 feet wider. The wider deck and new railing (see Figures 1-6 through 1-17) may change the rural feel of the area and inhibit views of the surrounding landscape.

- Cut and fill slopes that may displace established stands of vegetation that currently buffer views from the north to the south end of the bridge may modify views.
- Earthwork at the north bluff to construct the new abutment would be required and may change views.
- The new bridge would enter the river corridor at a higher elevation and further to the east than the existing bridge, nearly meeting the profile of the existing bridge in the middle, and leaving the estuary at nearly the same elevation at the north. Given the higher profile at the south, the bridge may be more noticeable from various locations.

Viewer Group One (Residents at North): Residents would have their views to the bridge altered, to a bridge that is more massive and longer than the existing structure. By bringing the bridge closer to the homes and creating a longer structure, this alignment would impact views of those living in the river corridor to the east of the bridge. The new bridge would be wider and more massive than the existing structure, possibly making the bridge more visually intrusive. The bridge would also introduce cut slopes to viewers from the north side of the river. This cut would remove the mound and the thick vegetation between the existing road and the river corridor that currently buffers views from the north side of the river to the south where the existing highway approaches the bridge. The extent to which the bridge would impact residents would vary depending on the location of the viewer. Those residents further east of the bridge would have a less direct view than those few residents closer to the bridge. In particular the residents directly east of the existing bridge would be impacted more so than any other viewers. Viewers from this location would have the new bridge entering the estuary at a point further to the east than the existing structure exposing the viewer to a longer structure.

Figure 1-6 Existing Bridge Looking North

Figure 1-7 Alt. C (Eight Foot Shoulders) Looking North

Figure 1-8 Alt. C-SW (Six Foot Shoulders W/Sidewalk) Looking North

Figure 1-9 Existing Bridge Looking South

Figure 1-10 Alt. C (Eight Foot Shoulders) Looking South

Figure 1-11 Alt. C-SW (Six Foot Shoulders W/Sidewalk) Looking South

Figure 1-12 Existing Bridge Pedestrian Looking South

Figure 1-13 Alt. C (Eight Foot Shoulders) Pedestrian Looking South

Figure 1-14 Alt. C-SW (Six Foot Shoulders W/Sidewalk) Ped. Looking South

Figure 1-15 Existing Bridge Looking North Perspective

Figure 1-16 Alt. C (Eight Foot Shoulders) Looking North Perspective

Figure 1-17 Alt. C-SW (Six Foot Shoulders W/Sidewalk) Looking No. Perspective

Viewer Group Two (Ten Mile River Basin Users): Impacts to this group would vary depending on the vantage point of the particular user. In general, this alternative would introduce a longer bridge, and a cut to the north-facing slope, and a fill at the abutment to the east of the existing bridge. The longer and thicker structure would be more visibly intrusive than the existing bridge, but the new structure would have fewer supports in the river and longer spans. This would provide for fewer vertical breaks to a viewer looking from a point of view below the bridge.

Viewer Group Three (MacKerricher State Park Users): There are areas within MacKerricher State Park with views of the Ten Mile River corridor including the Ten Mile River Bridge. The majority of these views are from the top of dunes to the southwest of the bridge, although the bridge also can be seen from the beach and the Park directly west of the bridge. The Ten Mile River Bridge can also be seen from the Old Haul Road, which now serves as a trail in and out of the Park. The alignment of the bridge would move the bridge further away from the Park and would not impact the views from the Park users significantly. Although the profile is at a higher elevation it mimics the profile of the existing bridge, and would not have a negative visual impact from this distance. The cut and fill slopes would be difficult to see from the west side of the bridge and would not be a negative visual impact to viewers to the west of the bridge.

Viewer Group Four (Private Drive at South End of Project): Views of the bridge from the southeast are minimal due to thick, tall vegetation. However there are clear views of the bridge from the southeast close to the bridge. These views occurring at a close proximity to the bridge would be similar to those seen from the river corridor. The cut slope and the new alignment would impact the viewers from this area.

Viewer Group Five (North and Southbound Vehicles): Views for the travelers of State Route 1 would be minimally changed. As the bridge is now, highway travelers have a view that is slightly interrupted by the bridge railings to the west of the Pacific Ocean and MacKerricher State Park, as well as to the east of Ten Mile River corridor.

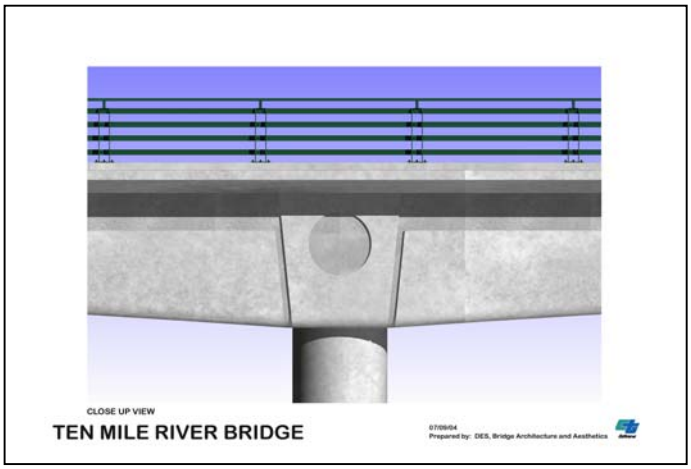
Rail Design

Alternative C Proposed Rail Design:

The bridge rail design (ST-20) was developed in coordination with the California Coastal Commission (see Figure 1-18). The design is based on safety (prevention of vehicles, pedestrians and bicycles from going over/through the bridge) and the desire to best optimize the view through the rail. Currently there are no other design options

for this type of bridge structure that meet both safety and the desire to have optimized views. For Alternative C, the ST-20 bridge rail would be used on both sides of the bridge.

Figure 1-18 ST-20 Proposed Bridge Rail



Alternative C-SW Proposed Rail Design

Alternative C-SW would use the ST-20 rail design for the east side of the bridge and the Quad Guard with pedestrian railing on the west side of the bridge (see Figure 1-19). The Quad Guard with pedestrian railing was developed with the California Coastal Commission, and was implemented successfully on the Noyo River Bridge on the Mendocino Coast.

Road Edge Committee

Caltrans and the California Coastal Commission are currently working together in a "Road Edge Committee." The Committee was formed to explore rail design aesthetics, while still meeting highway safety needs. Caltrans is willing to incorporate the findings of this Committee into the project's bridge rail design.

Figure 1-19 Noyo River Bridge Quad Guard With Pedestrian Railing

2.3.1.4 Avoidance, Minimization, and Mitigation Measures

A professionally licensed Landscape Architect found that the project would not create adverse impacts to the visual quality within the Ten Mile River viewshed. After completion of the new bridge, the existing bridge would be removed and the surrounding landscape would be graded to natural contours and planted with native species. The proposed bridge structural design and aesthetic treatment details would create less than adverse impacts to the visual character of the Ten Mile River within the project area compared to the existing bridge structure. The bridge railing Type ST-20 would improve the see-through characteristics of the bridge rail compared to the existing see-through railing on the existing structure.

Bridge Rail Recommendations

A professionally licensed Landscape Architect recommended the Type ST-20 for use on the Ten Mile River Bridge due to its optimal “see-through” capability of 68%. Use of the ST-20 bridge rail would improve views of the Ten Mile River and the middle and background compared to the current bridge rail used on the existing bridge structure.

Structural Recommendations

The design of the structure is very important to the visual impacts. A haunch girder system with rectangular piers was used in all simulations and is recommended in this situation (see Figures 1-20 and 1-21). The haunch girders make the structure seem less massive through the tapered girders and chamfered corners. This type of design seems to be more organic, and makes the bridge lines much softer. A subtle design is best suited given the tranquil and undeveloped setting that makes this location unique.

Figure 1-20 Existing Bridge Profile

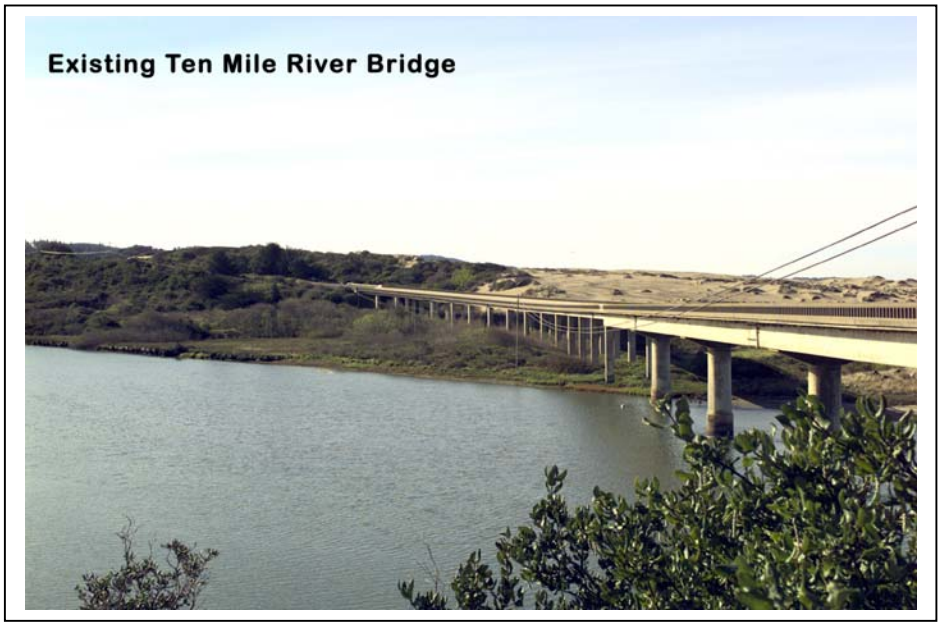
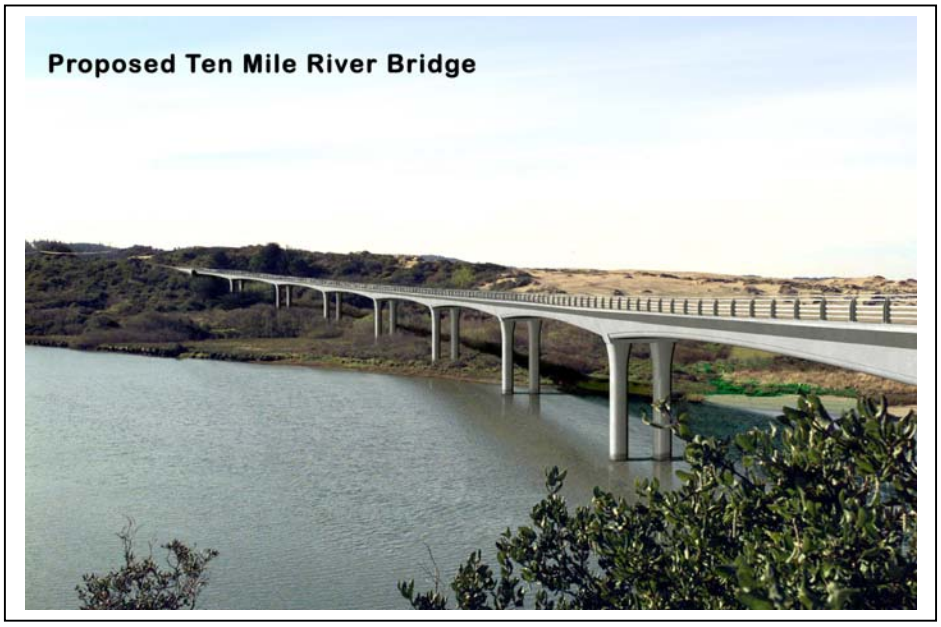


Figure 1-21 Proposed Bridge Profile (Alternative C and C-SW)



Revegetation Plan

A revegetation plan would be included as part of the project, and would include replanting with native vegetation. The plan would address revegetation of locations impacted during the construction process (temporary), and at locations where the existing facility is located. After the existing bridge is removed, existing pavement that leads up to the abandoned bridge would be removed from the project site. The compacted soil below the old roadbed would be broken up and compacted to no greater than 85% to allow for successful revegetation. Monitoring would be included as part of the revegetation plan to ensure successful plant reestablishment.

2.3.1.5 Cumulative Impacts

Due to avoidance and minimization measures, cumulative impacts would not be associated with the project.

2.3.2 Water Quality and Storm Runoff

2.3.2.1 Regulatory Setting

The primary federal law regulating Water Quality is the Clean Water Act (CWA). Section 401 of the Clean Water Act requires a water quality certification from the State Board or Regional Board when a project: 1) requires a federal license or permit (a Section 404 permit is the most common federal permit for Caltrans projects), and 2) would result in a discharge to waters of the United States.

Section 402 of the Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) permit system for the discharge of any pollutant (except dredge or fill material) into waters of the United States. In 1987 the Clean Water Act was amended and added section 402(p), which established a framework for regulating storm water discharges under the National Pollutant Discharge Elimination System program. Subsequently, in 1990, the U.S. Environmental Protection Agency (U.S. EPA) promulgated regulations for permitting storm water discharges from industrial sites (including construction sites that disturb five acres or more) and from municipal separate storm sewer systems (MS4s) serving a population of 100,000 people or more. These regulations, known as the Phase I regulations, require operators of medium and large MS4s to obtain National Pollutant Discharge Elimination System storm water permits. On December 8, 1999, U.S. Environmental Protection Agency promulgated regulations, known as Phase II, requiring National Pollutant Discharge Elimination System permits for storm water discharges from

Small MS4s and from construction sites disturbing between one and five acres of land. An "MS4" is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains). The U.S. Environmental Protection Agency defined MS4s to include roads and highways that traverse and serve urban population centers.

The California State Water Resources Control Board adopted a statewide Construction General Permit (NPDES General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity) to address construction projects which result in greater than 5 acres of disturbed soil area (later reduced to 1 acre – Phase II). In order to develop a consistent statewide approach to these new regulations and permit requirements, Caltrans requested the State Water Resources Control Board consider adopting a statewide permit that would cover both storm water discharges for MS4 requirements as well as requirements established under California's statewide Construction General Permit for construction activities. As a result, Caltrans received a National Pollutant Discharge Elimination System permit which regulates all storm water and non-storm water discharges from all Caltrans properties, facilities, and activities under Order No. 99-06-DWQ, NPDES NO. CAS000003, the National Pollutant Discharge Elimination System Permit, Statewide Storm Water Permit and Waste Discharge Requirements for the State of California, Department of Transportation (Caltrans Statewide General National Pollutant Discharge Elimination System Permit).

National Pollutant Discharge Elimination System permits for storm water discharges must meet all applicable provisions of section 301 and 402 of the Clean Water Act. These provisions require control of pollutant discharges to the Maximum Extent Practicable (MEP) for MS4 permit requirements and to the standard of Best Available Technology Economically Achievable/Best Conventional Technology (BAT/BCT) for Construction General Permit requirements. Caltrans has a revised Storm Water Management Plan (SWMP, May 2003) that includes new and revised Best Management Practices (BMPs).

Some construction activities may require a site-specific National Pollutant Discharge Elimination System permit. All Caltrans projects that are subject to the Construction General Permit require a Storm Water Pollution Prevention Plan (SWPPP) be prepared by the contractor for review and approval by the Resident Engineer. The

SWPPP identifies construction activities that may impact water quality, and Best Management Plans to minimize and/or eliminate any potential impacts.

The North Coast Regional Water Board (RWB) has adopted a Basin Plan for the North Coast Region. The Basin Plan defines beneficial uses of receiving waters, sets forth water quality objectives to protect and enhance these beneficial uses, and formulates water management programs to control discharges to receiving waters. The North Coast Regional Water Quality Control Board has designated the following beneficial uses for the Ten Mile River Basin Plan:

- Municipal and Domestic Supply (MUN) – Existing
- Agricultural Supply (AGR) – Existing
- Industrial Service Supply (IND) - Existing
- Industrial Process Supply (PRO) - Potential
- Groundwater Recharge (GWR) - Existing
- Freshwater Replenishment (FRSH) – Existing
- Navigation (NAV) - Existing
- Hydropower Generation (POW) - Potential
- Water Contact Recreation (REC-1) - Existing
- Non-Contact Recreation (REC-2) - Existing
- Commercial and Sport Fishing (COMM) - Existing
- Aquaculture (AQUA) – Potential
- Cold Freshwater Habitat (COLD) - Existing
- Wildlife Habitat (WILD) - Existing
- Rare, Threatened, or Endangered Species (RARE) - Existing
- Migration of Aquatic Organisms (MIGR) – Existing
- Estuarine Habitat (EST)
- Spawning, Reproduction, and/or Early Development (SPWN) – Existing

The following Specific Water Quality Objectives have been identified for Ten Mile River:

Dissolved Oxygen (mg/l)			Hydrogen Ion (pH)	
Min	90% Lower Limit	50% Lower Limit	Max	Min
7.0	7.5	10.0	8.5	6.5

Section 303(d) of the Clean Water Act, directs states, territories and authorized tribes to develop a list of water quality limited segments for receiving waters that are not meeting beneficial uses. 303(d) listed waters do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The 303(d) list also describes the pollutants(s) for each

water body that limit(s) its use or prevent(s) attainment of its water quality objectives. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop action plans, called Total Maximum Daily Loads (TMDL), to improve water quality. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non-point sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the State has designated. The calculation must also account for seasonal variation in water quality.

The Ten Mile River watershed was listed on the 1998, 303(d) list by the State of California pursuant to the Clean Water Act. For the Ten Mile River watershed, the listing was the result of water quality problems related to excess sediment throughout the watershed. Sediment was determined to be impacting the cold-water fishery, a beneficial use, including the migration, spawning, reproduction, and early development of cold-water fish such as coho salmon and steelhead trout. Cold freshwater and estuarine habitats are also designated beneficial uses of the Ten Mile River watershed. The U.S. EPA established the Ten Mile River Total Maximum Daily Load in December 2000. In the case of the Ten Mile River and its tributaries, the loading capacity is based on an analysis of the amount of human-caused sediment delivery that can occur in addition to natural sediment delivery without causing adverse impacts to salmonids. The loading capacity for the Ten Mile River basin was determined to be 125% of the estimated background rate. The background rate was calculated to be 311 tons/mi^2/year. As such, the loading capacity is calculated to be approximately 390 tons/mi^2/year. The proposed Total Maximum Daily Load and Load Allocations are expressed as an average annual loading rate, and are intended to be interpreted as a 10-year rolling average, which more appropriately describes sediment loadings that can achieve water quality conditions. To achieve the overall goal of the Total Maximum Daily Load, ‘Water Quality Targets’ consisting of Instream Targets, Habitat Characteristics Targets, and Hillslope Targets were developed.

It should be noted that while paved highways are named in the Total Maximum Daily Load as a contributing source of sediment, the Total Maximum Daily Load recognizes that only a very small portion of Highway 1 is contained in the watershed.

2.3.2.2 Affected Environment

The Ten Mile River drains 120 square miles of forested, coastal watershed in Mendocino County. The project is located in the Mendocino Coast Hydrologic Unit, Rockport Hydrologic Area, Ten Mile Hydrologic Sub-Area (HAS 113.13), and within the jurisdictional boundary of the North Coast Regional Water Board. The mouth of the river is about 10 miles north of Fort Bragg. The watershed elevation ranges from sea level to 3,240 feet at Strong Peak. Average annual precipitation ranges from about 40 inches per year near the coast to greater than 70 inches at higher elevations in the northern and eastern portions of the watershed. Most precipitation occurs as rainfall.

Ten Mile River has three main forks: the North Fork, Middle Fork (also known as the Clark Fork), and the South Fork. Each of these tributary watersheds form an approximately equal size watershed, with an additional nine square miles lower mainstem watershed. Most of the basin, aside from the northeast grasslands area, is characterized by steep, narrow drainages bordered by steep to moderately steep slopes leading to the headwaters of the tributaries. The lower portion of the South Fork Watershed, like the lower Middle Fork and much of the lower Mainstem, has broad alluvial valleys bordered by high relief terrain. The headwaters of the North Fork are characterized by relatively gentle terrain, while the headwaters of the Middle and South Forks are characterized more by summits and ridgelines. The Ten Mile River Bridge is located near the mouth of the river and near the Pacific Ocean. This portion of the river is relatively flat with a shallow gradient and wetland habitats.

2.3.2.3 Impacts

Potential Temporary Water Quality Impacts

Potential water quality impacts to Ten Mile River waters could occur as a result of the proposed project. The following identifies the construction related activities that could potentially result in direct sediment discharges to the river:

1) At the start of construction, clearing and grubbing would be required to gain access to the river, and could lead to increased erosion.

2) After cofferdam sheets are installed, the contained water would be pumped out of the cofferdam and directly into the river.

3) Steel shells would be driven within the cofferdam. Soil inside the hollow piles is

removed by 'drilling' out the excess material. The material is removed from the shell and stockpiled for future disposal or for future use as backfill.

4) The Cast in Steel Shell (CISS) piles are constructed using reinforcing steel and concrete. Depending on water and pile elevations, continuous pumping of water out of the cofferdams and/or steel shells may be necessary. The pumped water would be discharged directly into the river.

5) The CISS piles are capped with a reinforced concrete footing. The area within the cofferdam during this phase of construction may require soil removal. The material is removed from the shell and stockpiled for future disposal or for future use as backfill.

6) A portion of the excavated soil would be temporarily stockpiled and later disposed of or used as backfill. Excess soil would be hauled away to a permitted disposal site. Stockpiled soil, and excess soil prior to disposal, would be dewatered. Dewatering would be accomplished by settling and filtration using detention basins, containment tanks, and/or filtration devices. Excess water may be discharged to the river and/or to land.

As a result of the potential discharges described in number two through six above, short-term increases in turbidity are expected to occur adjacent to the cofferdams. However, the short-term increases are expected to be localized and not result in impacts to beneficial uses. Construction involving seal course and concrete work can also be expected to increase the pH of the water contained within the cofferdams.

There is also a potential for spills and leaks of lubricant, oil and grease, and other fluids associated with vehicles and equipment during construction. Fueling or maintenance of construction vehicles would occur in the project area during construction and there would be a risk of accidental spills or releases of fuels, oils, or other potentially hazardous materials. An accidental release of these materials may pose a threat to water quality if contaminants enter storm drains and/or receiving waters.

Potential Permanent Water Quality Impacts

Potential long term impacts could result from the discharge of storm water that may contain some pollutants typically present in storm water runoff from highway

facilities (e.g., oil and grease). Sediment is also a concern as discussed in the previous section with regard to the sediment Total Maximum Daily Load.

2.3.2.4 Avoidance, Minimization, and Mitigation Measures

Measures to Address Temporary Water Quality Impacts

The project would result in a disturbed soil area of approximately 10 hectares (approximately 25 acres) or more, and therefore shall be regulated under the Department's Statewide National Pollutant Discharge Elimination System Permit, which includes by reference the Statewide Construction General Permit. A Notice of Construction (NOC) would be filed with the North Coast Regional Water Board a minimum of 30 days prior to construction. To comply with the conditions of the Department's Statewide National Pollution Discharge Elimination System Permit, and to address the potential temporary water quality impacts resulting from construction activities, Standard Special Provision (SSP) 07-345 would be included as part of the Plans, Specifications, and Estimates. SSP 07-345 would address water pollution control work and implementation of a Storm Water Pollution Prevention Plan during construction. The North Coast Regional Water Board has the authority to request a copy of the Storm Water Pollution Prevention Plan at any time, including up to 30 days prior to the commencement of soil disturbing activities; to require changes to the Storm Water Pollution Prevention Plan; and to enforce the provisions of the Storm Water Pollution Prevention Plan.

Construction activities would provide all the necessary erosion and water quality control practices to minimize the potential for sedimentation through the use of construction Best Management Practices identified in Caltrans Construction Site Best Management Practices Manual. Approved construction Best Management Practices applicable to this project include measures for temporary sediment control (e.g. silt fences, fiber rolls, straw bale barriers, temporary detention basins) and temporary soil stabilization (e.g. hydraulic mulching, hydroseeding, straw mulch).

In order to address Best Available Technology Economically Achievable/Best Conventional Technology for Construction General Permit requirements, Caltrans has developed a Construction Site Best Management Practices Manual. As outlined in Attachment C of Caltrans Storm Water Pollution Prevention Plan /Water Pollution Control Plan Preparation Manual some construction Best Management Practices are

considered minimum requirements unless otherwise demonstrated to not be appropriate for a particular project. These include:

- Temporary Soil Stabilization BMPs: Scheduling (SS-1), Preservation of Existing Vegetation (SS-2), and one or a combination of the following five BMPs; Hydraulic Mulch (SS-3), Hydroseeding (SS-4), Soil Binders (SS-5), Straw Mulch (SS-6), Geotextiles, Plastic Covers, & Erosion Control Blankets/Mats (SS-7);

- Temporary Sediment Control BMPs: Silt Fence (SC-1), Fiber Rolls (SC-5), Street Sweeping and Vacuuming (SC-7), and Storm Drain Inlet Protection (SC-10);

- Wind Erosion Control Best Management Practices: Wind Erosion Control (WE-1);

- Non-Storm Water Management Best Management Practices: Illicit Connection/Illegal Discharge Detection and Reporting (NS-6), Vehicle Equipment and Cleaning (NS-8), Vehicle Equipment and Fueling (NS-9), and Vehicle and Equipment Maintenance (NS-10);

- Waste Management and Material Pollution Control Best Management Practices: Material Delivery and Storage (WM-1), Material Use (WM-2), Stockpile Management (WM-3), Spill Prevention and Control (WM-4), Solid Waste Management (WM-5) and Sanitary/Septic Waste Management (WM-9).

If water within the contained cofferdams exceeds normal pH levels, commercial additives would be used to restore pH to existing river conditions.

A spill on the roadway would trigger immediate response actions to report, contain, and mitigate the incident. Caltrans has contingency plans, procedures, and emergency response crews trained for incident response. These procedures designate a chain of command for notification, evacuation, response, and cleanup of spills resulting from the use and/or transport of hazardous materials.

Measures to Address Permanent Water Quality Impacts:

As stated above, the evaluation process for including treatment Best Management Practices into a proposed project was initiated to demonstrate the proposed project would meet Maximum Extent Practicable water quality measures in accordance with Caltrans' Statewide National Pollution Discharge Elimination System Permit. Given the regulatory policies and documents currently in place for the Ten Mile River watershed, Caltrans staff initially consulted with staff from the Coastal Commission (CC) and the North Coast Regional Water Board in June 2001 regarding the Ten Mile River Sediment Total Maximum Daily Load and feasible treatment Best Management Practices alternatives for the proposed project. Given the geography of the site location, the agencies agreed that high water tables and saturated soil conditions during the wet weather season rendered both infiltration and detention basins as not feasible.

Caltrans' Office of Structure Design completed a bridge deck drainage study in April 2003. The study noted that due to the vertical alignment of the bridge structure numerous deck drains would be required to collect storm water runoff from the bridge deck, and this would involve a complex and extremely elaborate set of pipe networks. After a review of the bridge alignment and the geometry of the river channel, it was determined that the closest discharge points from a required set of pipe networks would be Pier 5 and Abutment 9 (North Abutment). However, the study concluded that the required longitudinal drainage pipe gradient to carry the collected storm water to the discharge points would not fit within the bridge alignment due to the distance required (i.e. the pipes would hit the ground and/or water surface prior to reaching the discharge points).

The next approach was to seek preliminary approval from the North Coast Regional Water Board to allow storm water discharges off the bridge deck to the Ten Mile River channel. This approach would seek concurrence for the proposed bridge design prior to adoption of a Total Maximum Daily Load Implementation Plan, which may prevent or limit such discharges. This request was made to the North Coast Regional Water Board in May 2003. The drainage study by the Office of Structure Design was attached to that request. In August 2003, the North Coast Regional Water Board responded with a concurrence of understanding that collection of the storm water from the bridge deck would not be feasible without a significant vertical realignment of the bridge structure. (Note: Adjacent property owners and third party groups have voiced support of the bridge replacement project on the condition that the new bridge

stay as close as possible to current alignment of the existing bridge). The North Coast Regional Water Board conditioned the approval with the caveat that storm water that falls on the bridge approaches be treated with biofiltration. To this end, Caltrans design staff located feasible locations for bio-strips.

2.3.2.5 Cumulative Impacts

Caltrans staff does not anticipate any cumulative impacts to water quality associated with the proposed project. Caltrans staff has included bio-strips as part of the bridge design. This would afford some water quality benefits after project completion.

2.4 Optional Disposal Sites

Caltrans is required to provide optional disposal sites for contractors working on state highway projects. Optional disposal sites are just that, optional. The contractor may use the identified site/s or choose another site to dispose of dirt and other construction related material. Caltrans has identified five optional disposal sites that have been preliminarily cleared for having a minimal-to-no-likelihood of impacting biological and cultural resources, or encountering hazardous waste/materials. If the contractor chooses to use one or more of the optional disposal sites, pre-disposal botanical surveys (to be conducted in the spring/summer months), a Mendocino County Grading Permit, and a Coastal Development Permit would be required. Revegetation with native species would be required for all sites. Each photo displays the property's Assessor Parcel Number (APN). The following are the preliminarily cleared optional disposal sites.

1) State Route 1, Mendocino County, Post Mile 66.00

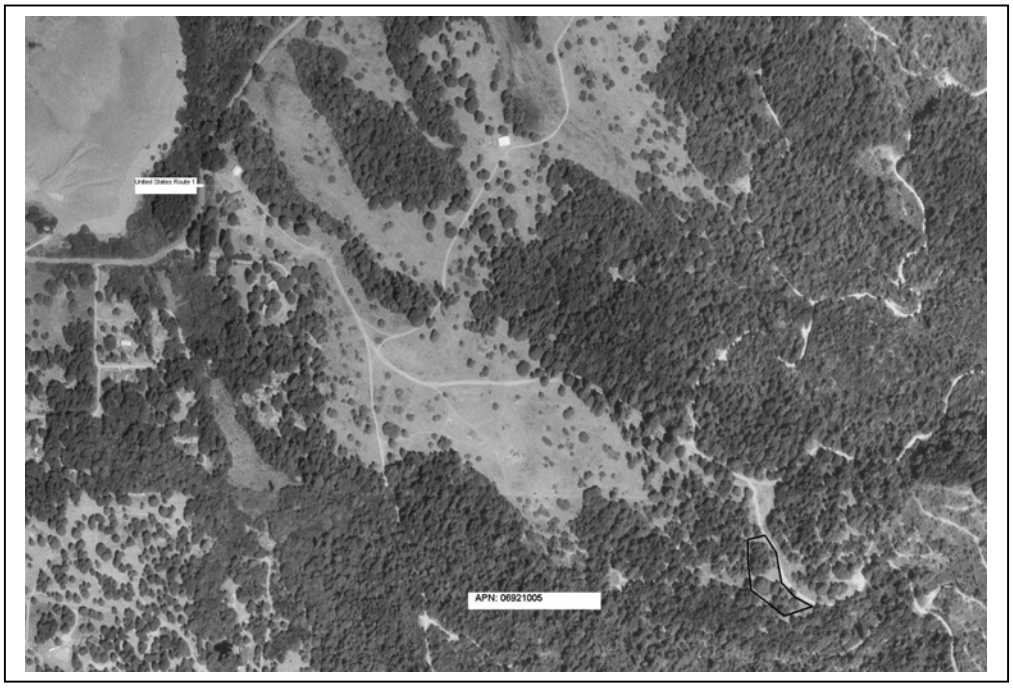


Figure 1-22 Optional Disposal Site #1

2) State Route 1, Mendocino County, Post Mile 70.3

Figure 1-23 Optional Disposal Site #2

3) State Route 1, Mendocino County, Post Mile 74.74

Figure 1-24 Optional Disposal Site #3

4) State Route 1, Mendocino County, Post Mile 80.50

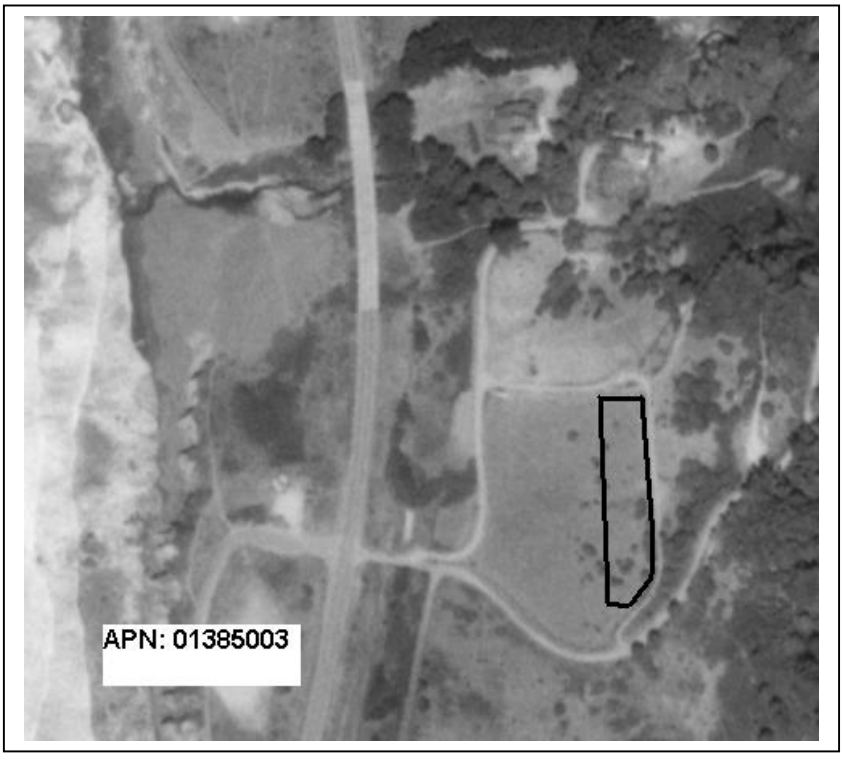


Figure 1-25 Optional Disposal Site #4

5) State Route 1, Mendocino County, Post Mile 81.25

Figure 1-26 Optional Disposal Site #5

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including Project Development Team meetings, interagency coordination meetings, consultations with the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration National Marine Fisheries Service, and the California Department of Fish and Game. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

9/98 Site Meeting with landowners, State Parks, discussed bridge replacement Alternative A (upstream from existing bridge) and Alternative B (downstream from existing bridge).

1/99 Formal Project Development Team (with external members and with members of the public attending) in Fort Bragg; bridge replacement Alternatives A and B adopted (North California Trails Council, the U.S. Fish and Wildlife Service, the California Department of Parks and Recreation, the Ten Mile Coastal Trail Foundation, and the Friends of the Ten Mile River attended).

8/01 Formal Project Development Team meeting (with external members and with members of the public attending) in Fort Bragg; seismic retrofit Alternatives 1 and 2 adopted as two new retrofit alternatives (Friends of the Ten Mile River, California Department of Fish and Game, California Department of Parks and Recreation, Mendocino County Planning, and the California Highway Patrol attended).

7/02 Public Information Workshop - presented Alt A, B, C, 1 and 2. (Friends of the Ten Mile River and the Ten Mile Coastal Trail Foundation attended).

10/02 Formal Project Development Team meeting (with external members and with members of the public attending) in Fort Bragg; adopted Alt C as preferred construction alternative and officially rejected all other alternatives.

9/03 Meeting with National Oceanic and Atmospheric Administration National Marine Fisheries.

9/04 Public Information Workshop – presented Alternative C (with see-thru-bridge rail options) to provide the public another opportunity for comments before Caltrans applies for permits. (Friends of the Ten Mile River, California Department of Parks and Recreation, Mendocino County Planning Department, California Highway Patrol, and the Mendocino Audubon Society attended).

10/04 Submitted project information to California Coastal Commission.

3/04 Meeting with National Oceanic and Atmospheric Administration National Marine Fisheries, U.S. Fish and Wildlife Service, and the Federal Highway Administration.

1/05 Field meeting with National Oceanic and Atmospheric Administration National Marine Fisheries, California Department of Fish and Game, and the U.S. Army Corps of Engineers.

2/05 Field-reviewed project site with the California Coastal Commission and the California Department of Parks and Recreation.

3/05 Meeting with National Oceanic and Atmospheric Administration National Marine Fisheries.

5/05 Phone conference with National Oceanic and Atmospheric Administration National Marine Fisheries.

6/05 Phone conference with the California Coastal Commission to discuss bridge design.

8/05 Meeting with the California Department of Fish and Game, the National Oceanic and Atmospheric Administration National Marine Fisheries, and U. S. Fish and Wildlife Service.

11/05 Phone conference with the California Department of Fish and Game, the National Oceanic and Atmospheric Administration National Marine Fisheries, and U. S. Fish and Wildlife Service.

11/05 Federal Consistency Review by the California Coastal Commission.

1/06 Phone conference with the California Department of Fish and Game, the National Oceanic and Atmospheric Administration National Marine Fisheries, and U. S. Fish and Wildlife Service.

3/06 Road edge subcommittee meeting with Caltrans staff, California Coastal Commission staff, and two California Coastal Commissioners to review bridge rail design and Alternative C-SW.

3/06 Meeting with Caltrans Director, Caltrans staff, California Coastal Commission Executive Director, andCalifornia Coastal Commission staff to discuss Alternative C-SW.

In addition to the above meeting, Caltrans performed a Value Analysis Study (VAS) in January 2002 in Fort Bragg. Value Management Strategies, Inc., lead the Value Analysis Study. As a result of the VAS, a new alternative to locate the new bridge upstream and as close to the existing bridge as possible was developed. This was identified as Alternative 1.1 and later renamed Alternative C. After a Public Workshop and subsequent Project Development Team meeting, Alternative C was adopted as the preferred alternative, rejecting all others.

Chapter 4 List of Preparers

This document was prepared by the following Caltrans North Region staff:

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Contribution: Historic Property Survey Report

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Contribution: Air, Noise and Vibration Report

Appendix A California Environmental Quality Act Checklist

The following checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.”

The California Environmental Quality Act requires that environmental documents determine significant or potentially significant impacts. In many cases, background studies performed in connection with the project indicate no impacts. A mark in the “no impact” column of the checklist reflects this determination. Any needed explanation of that determination is provided at the beginning of Chapter 2.

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
AESTHETICS - Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	X	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	☐	☐	☐	X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	X	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	X
AGRICULTURE RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	X
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	X
AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?				X
d) Expose sensitive receptors to substantial pollutant concentration?				X
e) Create objectionable odors affecting a substantial number of people?				X
BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	X
COMMUNITY RESOURCES – Would the project:				
a) Cause disruption of orderly planned development?	☐	☐	☐	X
b) Be inconsistent with a Coastal Zone Management Plan?	☐	☐	☐	X
c) Affect lifestyles or neighborhood character or stability?	☐	☐	☐	X
d) Physically divide an established community?	☐	☐	☐	X
e) Affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest group?	☐	☐	☐	X
f) Affect employment, industry, or commerce, or require the displacement of businesses or farms?	☐	☐	☐	X
g) Affect property values or the local tax base?	☐	☐	☐	X
h) Affect any community facilities (including medical, educational, scientific, or religious institutions, ceremonial sites, or sacred shrines?	☐	☐	☐	X
i) Result in alterations to waterborne, rail, or air traffic?	☐	☐	☐	X
j) Support large commercial or residential development?	☐	☐	☐	X
k) Affect wild or scenic rivers or natural landmarks?	☐	☐	☐	X
l) Result in substantial impacts associated with construction activities (e.g., noise, dust, temporary drainage, traffic detours, and temporary access, etc.)?	☐	☐	☐	X
CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	X
GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	X
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	X
ii) Strong seismic ground shaking?	☐	☐	☐	X
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	X
iv) Landslides?	☐	☐	☐	X
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	☐	☐	☐	X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	X
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	X
c) Emit hazardous emissions or handle hazardous or acutely hazardous material, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	X
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	X
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	X
HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?	☐	☐	☐	X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?	☐	☐	☐	X
e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	X
f) Otherwise substantially degrade water quality?	☐	☐	☐	X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	X
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	X
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	X
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	X
LAND USE AND PLANNING – Would the project:				
a) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	X
MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	X
NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	X
POPULATION AND HOUSING – Would the project:				

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
PUBLIC SERVICES -				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	X
Police protection?	☐	☐	☐	X
Schools?	☐	☐	☐	X
Parks?	☐	☐	☐	X
Other public facilities?	☐	☐	☐	X
RECREATION -				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	X
TRANSPORTATION/TRAFFIC – Would the project:				

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	X
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	X
c) Result in a change in air traffic patters, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incomplete uses (e.g., farm equipment)?	☐	☐	☐	X
e) Result in inadequate emergency access?	☐	☐	☐	X
f) Result in inadequate parking capacity?	☐	☐	☐	X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	X

UTILITY AND SERVICE SYSTEMS - Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	X
e) Result in determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	X

	Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	X
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	X

MANDATORY FINDINGS OF SIGNIFICANCE -

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, or cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	X
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	X
c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	X

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
1120 N STREET
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Flex your power!
Be energy efficient!

January 14, 2005

TITLE VI
POLICY STATEMENT

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

WILL KEMPTON
Director

"Caltrans improves mobility across California"

Appendix C State Historic Preservation Officer Concurrence Letter

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARTZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov
www.ohp.parks.ca.gov

August 31, 2004

In Reply Refer To
FHWA040819A

Tim Ash, Environmental Management Chief
Caltrans North Region, Eureka
Department of Transportation, District 1
1656 Union Street
Eureka, CA 95501

RE: 01-MEN-1, PM 69.4/70.1, EA 01-385701 [SECTION 106 CONSULTATION ON CALTRANS' DETERMINATION OF ELIGIBILITY AND FINDING OF EFFECT FOR THE PROPOSED TEN MILE RIVER SEISMIC RETROFIT PROJECT ON ROUTE 1, MENDOCINO COUNTY, CALIFORNIA]

Dear Mr. Ash:

Thank you for your August 2, 2004 submittal that initiates consultation with me regarding the Determination of Eligibility and Finding of Effect for the undertaking referenced above. The California Department of Transportation (Caltrans), under the authority of the Federal Highway Administration (FHWA), is consulting with me in accordance with the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). Specifically, pursuant to Stipulation VIII.C.5 of the PA, Caltrans is requesting my concurrence with their determination that the four cabins associated with the Ten Mile Ranch (APN 015-130-40) and Ten Mile River Bridge (Br. #10-0161) are not eligible for inclusion in the National Register of Historic Places (National Register).

Your submittal included the following studies: *Historic Property Survey Report for the Ten Mile Bridge Seismic Retrofit Project, Mendocino County* (HPSR) by Sara Atchley (2004); *Archaeological Survey Report for the Ten Mile Bridge Seismic Retrofit Project, Mendocino County* by Sara Atchley (2004); and, *Historic Resources Evaluation Report for the Ten Mile River Bridge Replacement Project On Highway 1 near Fort Bragg, Mendocinco County,* by Fisher (1999) and Hope (2004).

By applying the National Register criteria (36 CFR Part 63) Caltrans has determined that Br. #10-0161 and the four cabins associated with the Ten Mile Ranch (APN 015-130-40) do not meet the criteria for listing on the National Register of Historic Places and are therefore not eligible for inclusion in the National Register. Based on the information presented in the submitted materials, I concur with Caltrans' determination that these properties are not eligible for the National Register. I acknowledge the Caltrans finding of "No Historic Properties Affected" pursuant to Stipulation IX.A.2 of the PA.

Thank you for consulting with me and for pursuing your responsibilities as outlined in the PA. Please contact Blossom Hamusek, Project Review Unit Staff Archaeologist at (916) 651-6956 or at bhamu@ohp.parks.ca.gov, if you have any questions or need clarification of any of my comments.

Sincerely,

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

Appendix D Technical Studies

Air, Noise and Vibration Report
Biological Assessment
Natural Environment Study
Historic Property Survey Report
Geotechnical Report
Visual Assessment